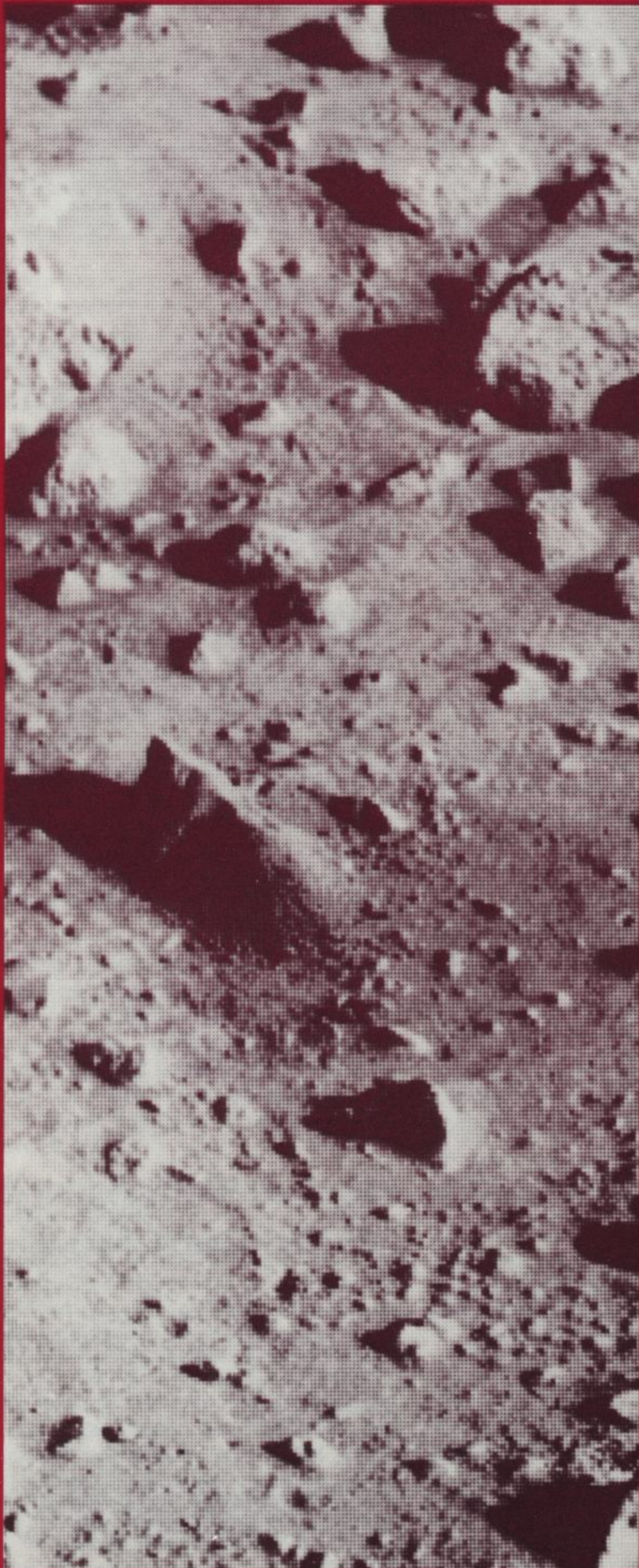


MARTIN MARIETTA

news

DENVER AEROSPACE

NUMBER 16/1982



Lander shows
soil movement

Viking lander featured at UNISPACE '82 exhibit

The Viking lander and several Space Shuttle projects highlight Martin Marietta's exhibit at UNISPACE '82, the second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, now under way in Vienna, Austria.

Delegations from 150 nations participate in the conference, which features space exhibits from nine major U.S. aerospace firms, the U.S. government, the European Space Agency, the Soviet Union, and 22 other countries.

The lander on exhibit is a full-scale, high-fidelity representation of the actual spacecraft which continues to transmit photographs and meteorological data from the surface of Mars, six years after landing. (See cover.)

Martin Marietta's UNISPACE '82 exhibit includes early photographs taken by Viking orbiters and landers, and well as recent photographs showing the Martian surface during summer and winter, when white frost patches dot the red soil.

Other elements of the exhibit include conceptual designs for a tethered satellite system, the Venus mapper, a space station, and large space systems.

The exhibit also features a full-scale model of the manned maneuvering unit complete with suited astronaut, and scale models of the teleoperator maneuvering system, an external tank aft cargo carrier, and a Shuttle-derived launch vehicle.

UNISPACE '82 began August 9 and ends August 21.

Michoud employment passed 4,000 mark

The Michoud division has surpassed the 4,000 mark in number of workers employed on the external tank project.

Current employment in New Orleans is 3,655, with 336 at Kennedy Space Center, 38 at the Marshall Space Flight Center in Huntsville, Alabama, 25 at National Space Technology Laboratory in Bay St. Louis, Mississippi, and 72 at other offsite locations.

In the first half of 1982, the division hired 250 employees.

On the Cover

These two photos of the Martian surface, taken by Viking Lander I, show wind erosion. A two-inch pile of soil was placed beside and partly atop a four-inch rock by the lander's soil-sampling arm in July 1977.

The left photo was taken in February 1979; the second in July 1981. Comparison of the photos shows that some of the soil has been removed by Martian wind.

New directors named in technical operations

Grover W. Hall Jr. has been named director of electronics in technical operations, replacing James W. McAnally, recently named to head the technical operations organization.

G. Thomas Marsh will replace Hall as director of electronics manufacturing.

Hall, who holds a BS degree in electrical engineering from the University of Cincinnati, has been with Martin Marietta since 1969. He has worked on the Voyager program, was HYBIC program manager, and manager of the high density tape recorder program. He was a 1978-79 Sloan Fellow at the Massachusetts Institute of Technology, earning a master of science in management degree.

Marsh was manager of the power systems section. He was lead engineer on the faint object spectrograph program, and hardware lead on SCATHA. He also worked on Skylab and Viking. He has been with the company since 1969. He has a BS degree in electrical engineering from the University of New Mexico. He has received the NASA Public Service award.

'Linkage' courses to begin in September

Employees seeking an on-site after-work educational program may find that the Linkage program offers what they want.

The Linkage program, now in its third year here, coordinates Arapahoe Community College and Loretto Heights College courses, leading to a course completion certificate, two-year associate degree, or four-year bachelor degree in business.

In general, freshman and sophomore courses are offered by Arapahoe faculty; junior and senior courses are taught by Loretto Heights faculty. Upper division courses for employees with bachelor's degrees are also offered.

Registration for classes in the Linkage program is September 8 from 2:30 to 4:00, engineering building, first floor cafeteria. Classes begin the week of September 13.

To date, 246 employees have enrolled in Linkage courses.

Courses offered during fall semester include accounting, political science, interpersonal communication, management principles, business law, and international business.

Dividend announced

The third quarter cash dividend of 48 cents per share on Martin Marietta common stock was announced by the board of directors July 22.

The dividend is payable September 30 to shareholders of record at the close of business September 7.



Marilyn McCoo

Marilyn McCoo, Symphony star at final family event

Singer Marilyn McCoo and the Denver Symphony Orchestra share the limelight Sunday, September 12, at McNichols Arena in the final company-sponsored family event of 1982.

McCoo, best known for her Grammy-award winning hit, "You Don't Have To Be A Star (To Be In My Show)," with husband Billy Davis, Jr. and a catalog of hit singles and albums with the 5th Dimension, is building a solo career.

Concert tickets are for Denver Aerospace and Data Systems employees who requested concert tickets as one of their two family activities. Department administrators may pick up tickets from recreation, Eng. 124G, August 25 from 9:00 to 11:00 a.m. and from 1:30 to 4:00 p.m.

Any remaining tickets will be given to department administrators for distribution on a first-come, first served basis to new employees or other employees requesting tickets; limit for extra tickets is two per employee.

Supervisor's handbook updates ready August 23

Distribution of updated pages of the supervisor's handbook will begin August 23 at Eng. 225A, across from the library.

Supervisors with letter designations A, B, C, D, E, or F on their latest employee change notice (ECN) may receive the new contents pages by returning their old handbooks and signing a new library card. New supervisors will be issued handbooks by signing for them.

Department administrators will receive lists of eligible supervisors from personnel.

Employee's experiment on 1984 Shuttle flight

Kevin Berry, an engineer on the GSS project at Vandenberg operations, will have an experiment on an early 1984 Space Shuttle flight.



Kevin Berry

He proposed the experiment while a student at California Polytechnic State University at San Luis Obispo. It was reviewed and accepted by the Cal Poly Space Program, a non-profit student research organization. The experiment, one of three to be flown by the organization in a NASA Get-Away Special payload, deals with electroplating in a micro gravity environment.

The design and development of the experiment was headed by Berry; he designed and built the control and data acquisition system for it. He left Cal Poly in April 1981 to work for Vandenberg operations in the test operations department. He continued to follow the development of the flight hardware in a consulting role after leaving school.

Along with the electroplating experiment in a 2.5 cubic foot canister are two others. They deal with immiscible alloy research and production of a foamed metal.

The Cal Poly Space Program is a student-organized and operated research and development organization. The physics department provides the organization office space and telephone service, but it receives no funding from the University, the state, or from NASA. It subsists on donations from industry and volunteer effort by student researchers.

Medalist shoots 71 in Martin Marietta Open

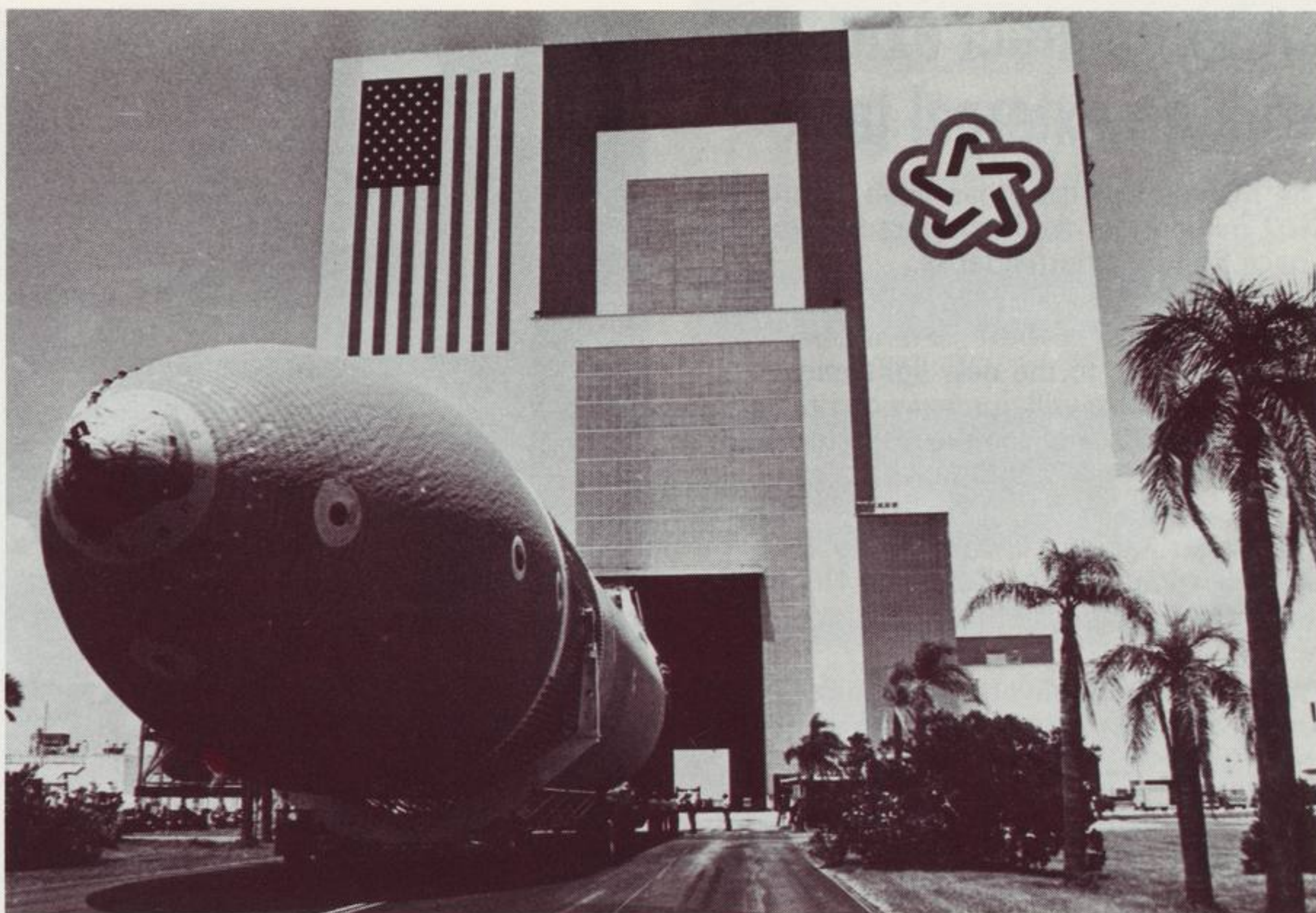
Paul McGhee copped medalist honors in the Martin Marietta Open golf tourney with a 71. Medalist runner-up was Scott Burroughs who carded a 74.

The Open was played July 31 at the Riverside Golf Club in Brighton.

Low net with regular handicap went to Adrian Tapia with a 54; runner-up was James W. Smith, 55.

Under the Peoria handicapping system Doug B. Grandee was low with a 48 with Michael Lee's 50 good for second. For the women, Marian Robinson had a 69 and Nancy Peek shot a 71.

Richard Roach had the longest drive on both contest holes for the men with Bette Henson and Mary Freed sharing honors for women. Mary Freed took closest to the pin prizes on the two designated holes with Jerry Drazes and Roy Regan getting the awards for men.



The sixth external tank (ET-6) rolls toward the vertical assembly building's High Bay 4 checkout cell at Kennedy Space Center August 2. For the first time, two external tanks are in the building simultaneously; ET-5 is in the High Bay 4 storage cell, awaiting solid rocket booster mating later this month.

New technology ideas receive cash awards

Seven employees will receive awards for new technological innovations made while working on NASA contracts.

Innovators and their findings are:

Fred E. Lukens, electronics: high common mode voltage high common mode rejection differential amplifier;

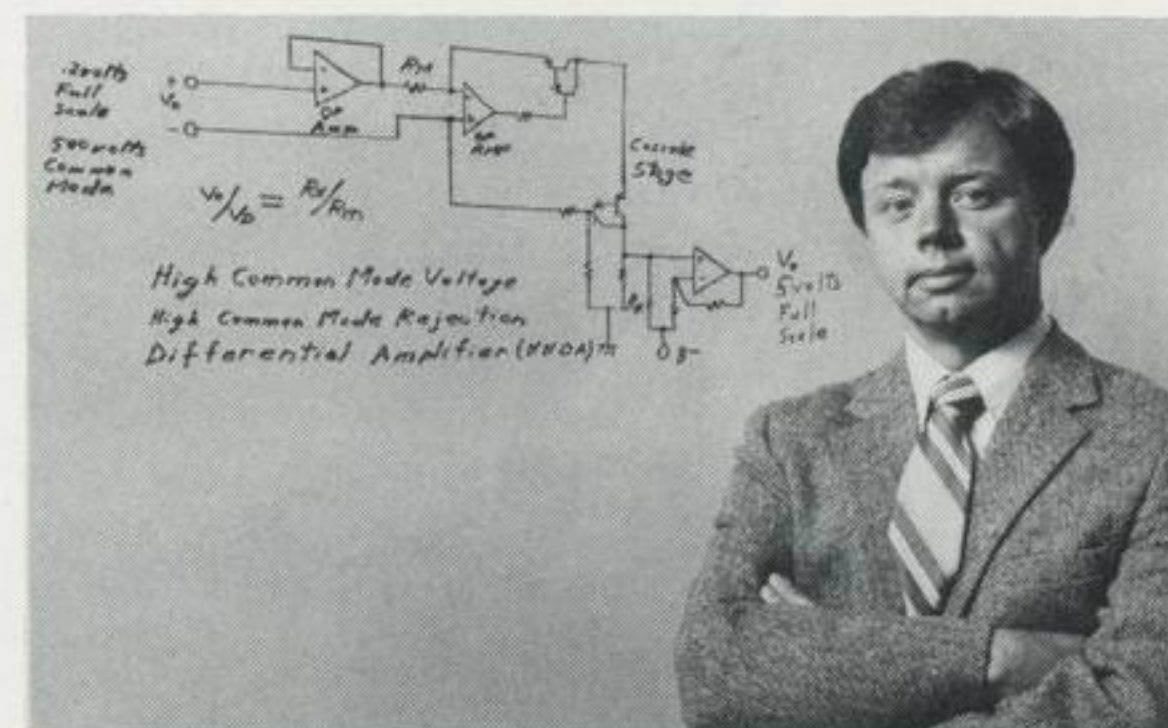
Scot K. Anderson and Benton C. Clark III, electronics: discriminating collectors for low velocity particles;

John V. Coyner, Jr., engineering mechanics, and Jeff G. Cox, systems engineering in space and electronics systems division: interactive creation of NASTRAN lattice mast models;

William R. Llewellyn, engineering mechanics;

non-backdriveable, overrunning clutch; and

William T. Perreault, electronics manufacturing: base plate for power converter with improved thermal characteristics.



Fred E. Lukens, electronics, with schematic diagram of his new technology idea.

New director named for Michoud program development

Douglas D. Hart has been named director of program development at Michoud. He succeeds Joseph C. Spencer who is now director of program development in Denver.



Douglas D. Hart

Hart was marketing manager for future systems in Denver.

He joined Martin Marietta in 1956 as a technical training instructor, joined the marketing

staff four years later, and worked in advanced programs, Skylab, and Titan III. From 1977 to 1980 he was field office manager for the corporate office in Omaha.

Hart attended Regis College in Denver, graduating with a bachelor's degree in business administration in 1959. He is a member of the American Institute of Aeronautics and the Air Force Association.

DSC blood drive is record setter

Blood donors at the Denver Systems Center (DSC) donated 151 pints of blood during the one-day visit of the Belle Bonfils Memorial Blood Center mobile collection unit July 30.

This is more blood collected in one day than during any previous visit to a Denver Aerospace facility. Among the employees giving blood were 27 first-time donors.

NASA contract extends work on external tank

The Michoud division has been awarded a \$107 million follow-on contract for work on Space Shuttle external tanks.

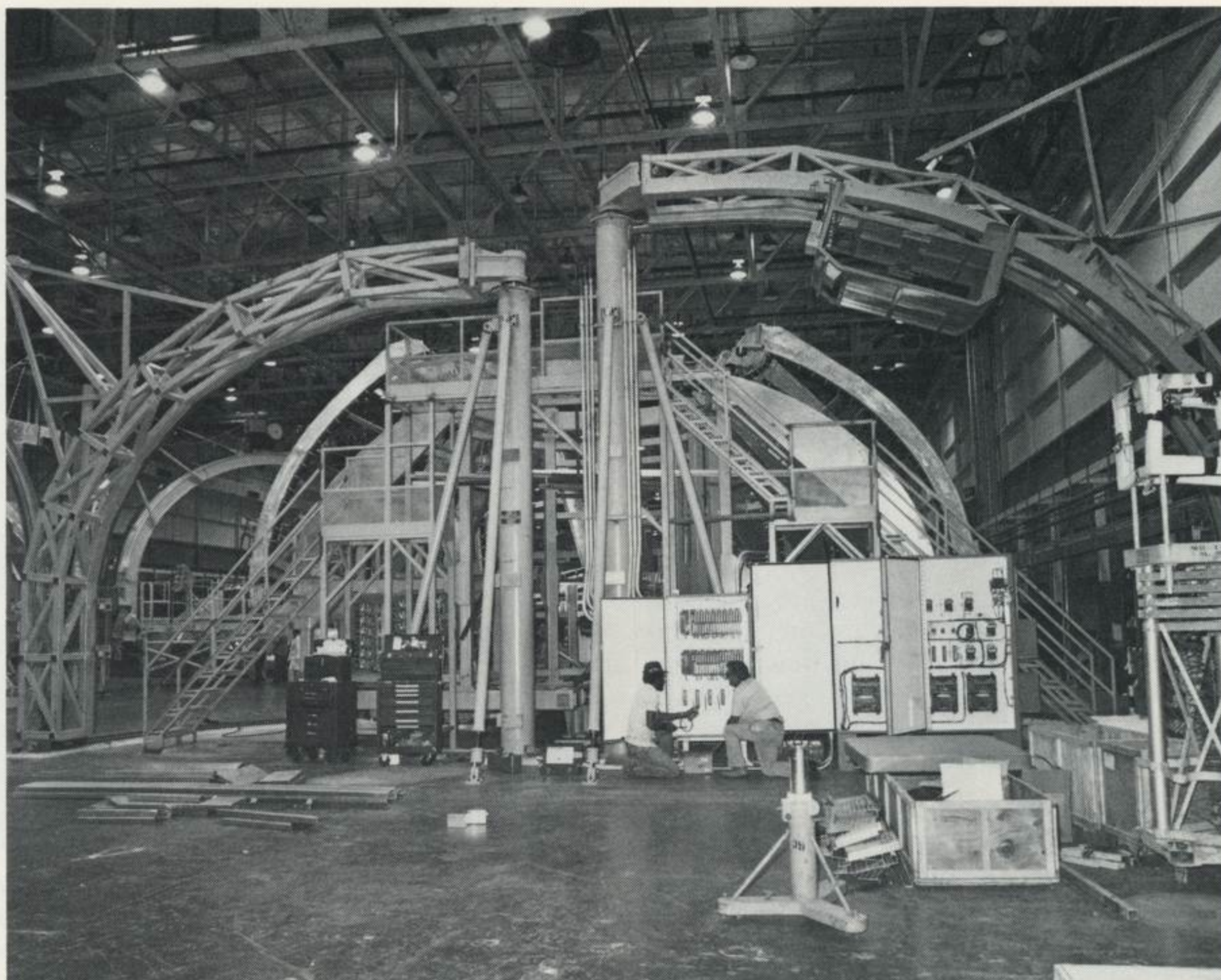
The division will convert six tanks, presently under contract, to the new lightweight configuration. It also will purchase components, subassemblies, and long-lead materials for 24 additional lightweight tanks.

The contract was awarded by NASA's Marshall Space Flight Center in Huntsville, Alabama.

The tanks will be delivered as required by the Space Shuttle mission schedule for flights from Kennedy Space Center.

Depending on Shuttle launch schedules, the division could add 500 employees during the course of the three-year contract.

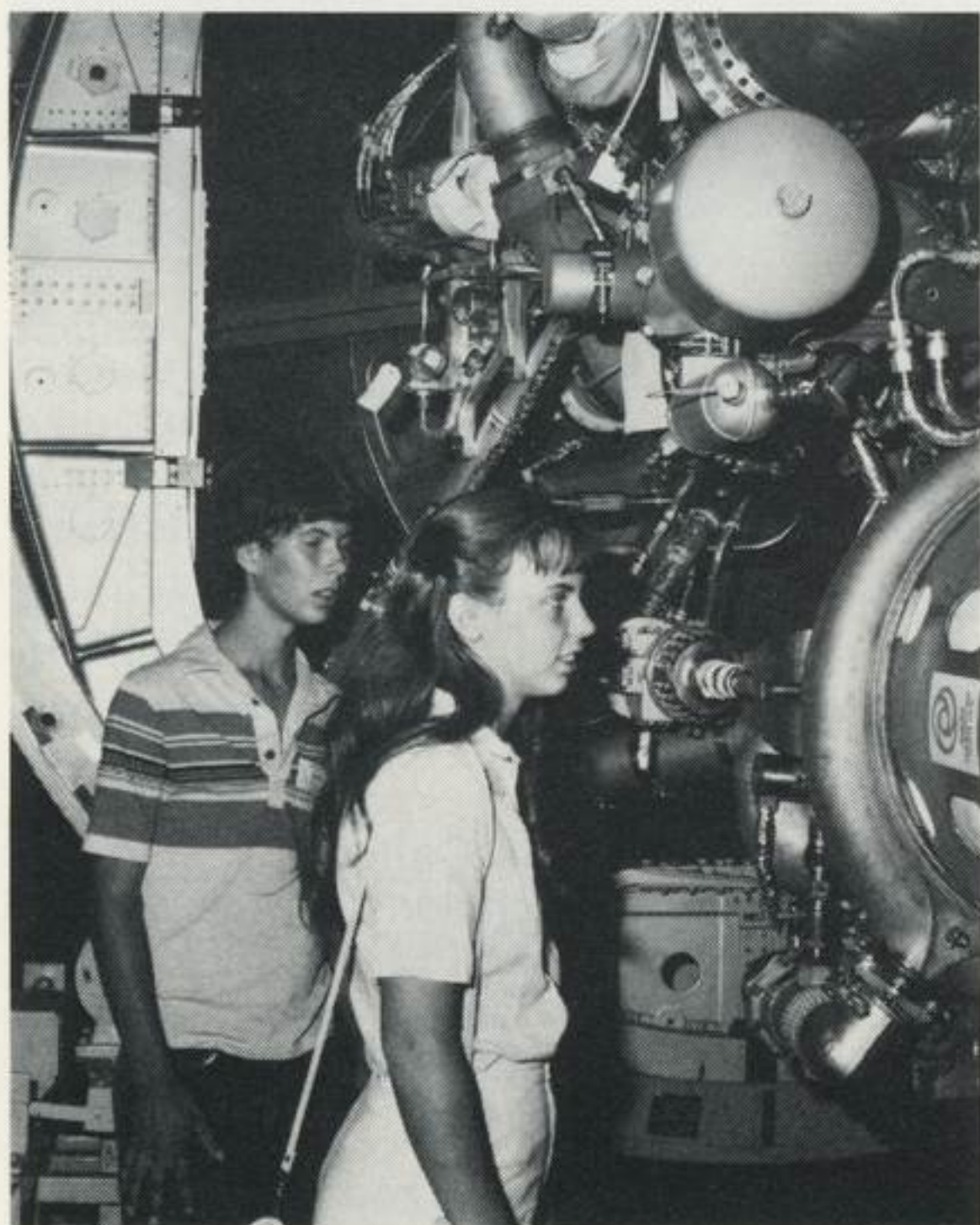
The Michoud division is currently under contract for 15 tanks—three for tests, 12 for flights. The three test tanks and the first six flight tanks have been delivered. The seventh tank is being prepared for shipment to KSC in September.



Electricians check wiring on a new half-dome trim and weld fixture, one of several new tools being installed to increase external tank production at Michoud.

Fund B rate increases

The net interest rate applying to Fund B of the Performance Sharing Plan increased to 12.35 percent July 1. The increased rate, up from 12.20 percent, will remain in effect through 1982 unless interest rates increase above mid-year levels.



Plant visitors Stuart Spath and Janet Meleney are scholars at the 1982 Frontiers of Science Institute at University of Northern Colorado. Both have parents employed by Denver Aerospace. Stuart's father is Charles R. Spath, software; Janet's father is Richard H. Meleney, performance measurement systems.

Recreation -

Discounts—August 14 is discount day for employees and their families at Elitch Gardens from 11:00 a.m. to 11:00 p.m. Admission and unlimited rides cost is \$6.50 with coupon from recreation.

Football—Flag football league referee applicants will meet August 24 at 4:30 p.m., engineering presentation room. Player registration ends August 25. For information, call recreation, Ext. 6750.

Hunting—Skyline hunting and fishing club will begin a seven-session hunter education course by Ron Steen August 21 from 7:00 to 9:00 p.m., DSC. Cost is \$5.00. For information call Richard Benson, Ext. 5241.

Archery—Red Rock Bowmen will meet at the archery range August 14 at 8:30 a.m. for a meeting and pre-hunt shoot, using fieldtips and broadheads. For information call Duane VanDeventer, Ext. 4026.

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DENVER AEROSPACE
P.O. Box 179—Denver, CO 80201

August 13, 1982

Michoud shifts to volume production

As volume production of the external tank replaces research and development at Michoud, changes are being made to factory layout and production.

Tank production will increase to 24 tanks per year in 1988, with eventual production rates of 40 or 50 tanks per year a possibility.

Equipment changes include installation of new large automated trimming and welding tools and automation of assembly, inspection, and testing procedures. To streamline movement of tank parts, facilities is creating a large east-west aisle through the 43-acre factory.

Additional production cells for applying the tank's thermal protection system (TPS) have been constructed. New methods of applying TPS to smaller tank components use 60 percent less material and take one-tenth the time of previous methods.

Existing tools and facilities are being made more efficient. Several manufacturing and test fixtures have been linked with computers; cranes have been modified for more efficient transfer of tank parts; and some tools will be repositioned for better production flow.

"The exciting thing about these changes is that each tool and facility change must occur at the same time work on the tanks continues," says Philip D. Catarella, facilities planning chief. "Since we don't have the luxury of shutting the plant down temporarily, we plan and work around production."